Challenge Based Innovation (6 ECTS credits)
Responsible: Pedro Rodrigues; **E-mail:** pedror@ipb.pt
Partners: Polytechnic Institute of Bragança (Portugal), Hanze University of Applied Sciences (The Netherlands), Bremen University of Applied Sciences (Germany), Universidad de La Laguna (Spain), Silesian University in Opava (Czechia), South East Technological University (Ireland)
Calendar: Virtual component starting 16/10/2023, ending 30/11/2023. Physical component starting 11/12/2023, ending 15/12/2023.
Contents: Team building. Analysis and study of the selected challenge. Teamwork. Discussion of ideas (brainstorming). Rapid prototyping and prototype evaluation (if applicable). Innovation. The value proposition for different stakeholders. Solution validation. Pitch/Selling. Creation of value proposition for the end user.

Creativity for Inclusion (6 ECTS credits)
Responsible: António Meireles; **E-mail:** antoniomeireles@ipb.pt
Partners: Polytechnic Institute of Bragança (Portugal), Bremen City University of Applied Sciences (Germany), Universidad de La Laguna (Spain), Hanze University of Applied Sciences (The Netherlands), Universidad de Vigo (Spain)
Calendar: Virtual component from 30/10/2023 to 19/01/2024. Physical component from 22/01/2024 to 26/01/2024
Contents: Groundwork and creativity structures presentation. Team Building. Teamwork. Inclusion concepts. Creativity concepts. Creativity tools setup. Inclusion through creativity case studies. Collaborative work and co-creation. Development of team solutions. End-users' validation. Presentation. Solution validation. Reflection.

Digital Manufacturing (6 ECTS credits)
Responsible: João Rocha, Leonel Deusdado, Jorge Santos, Cláudia Martins, João Ribeiro; **E-mail:** jrocha@ipb.pt
Partners: Polytechnic Institute of Bragança (Portugal), Vilnius College of Technologies and Design (Lithuania), Kaunas University of Applied Engineering Sciences (Lithuania), Universidad de Almería (Spain), Universidad de León (Spain)
Calendar: Virtual component starting 23/10/2023, ending 15/12/2023. Physical component starting 08/01/2024, ending 12/01/2024.
Contents: 1. Introduction: A. How to produce (almost) everything in small laboratories; B. The concept FabLab. 2. Equipment: A. 3D printer; B. Cutting and laser engraving; C. 3D scanner; D. Cut vinyl; E. milling machine; F. others. 3. Software used in additive manufacturing (and digital manufacture): A. Open source; B. Commercial. 4. Practical application of the equipment: a case study (for example a tactile plan, of one of the schools of origin of the students, made in laser cutting, or a model of a building, that could be a school or a historic building in the city, etc.).

Emotional Education (6 ECTS credits)
Responsible: Maria A Romão Veiga Branco, Ana Paula Monte, António Meireles, Vasco Alves, Miguel Monteiro; **E-mail:** aubra@ipb.pt
Partners: Polytechnic Institute of Bragança (Portugal), University Croix Rouge de Limoges (France), Wroclaw Medical University (Poland), Universidad de Almeria (Spain), Management and Law College Ljubljana (Slovenia), Kaunas University of Technology (Lithuania), University Alexandru Ioan Cuza of Iasi (Romania), Universidad de La Laguna (Spain).
Calendar: Virtual component starting 31/10/2023, ending 16/01/2024. Physical component, starting 08/01/2024, ending 12/01/2024.
Contents: Emotional Intelligence (IE), Emotional Competence (EC), Emotional Education (EE): Concepts and neuro-differentiation. Emotion: Functions and Effects of Cognitive and Behavioral Processes. Emotion and Feeling: differences and expressions. EE for EC - Health Promotion/ EC Dimensions. Be emotionally competent as Educator, Manager, Entrepreneur. EE Laboratories I, II: Emotion Management Strategies. Education, Management, Social and Health Institutions: Controlled Internship experience: Practical Intervention plan (individual, family, group/community context).

Machine Learning for Data Science (6 ECTS credits)
Responsible: Rui Pedro Lopes; **E-mail:** rlopes@ipb.pt
Partners: Polytechnic Institute of Bragança (Portugal), HSB – Bremen City University of Applied Sciences (Germany), Universidad de La Laguna (Spain), Hanze University of Applied Sciences (The Netherlands), Federal Center for Technological Education Celso Suckow da Fonseca (Cefet/RJ) (Brazil)
Calendar: Virtual component from 18/10/2023 to 18/12/2023. Physical component from 22/01/2024 to 26/01/2024
Contents: Introduction to the BIP; Big data, Big data life cycle; Introduction to machine learning; Data stream analysis; Neural networks; Model building and evaluation; Advanced models; Applications; Further trends and needs; Project preparation.